

Work Order ID 68738

Page 1

Thursday, April 21, 2011 8:15:21 AM

Item ID: D350-636-015

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

4-04-21

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3492

C

D4168

A

IIN-D350-636

H

100

0.00



DC

DOCUMENT CONTROL

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-015 CHG 002

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68738

Thursday, April 21, 2011 8:15:21 AM

Page 2

Item ID: D350-636-015

Accept

Setup Start

Revision ID:

Stop

Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals: Process Plan: Date: Tooling: Date:

Stop

QC: Date: SPC (Y/N): Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D4168

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr, section H-H

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting, section H-H

5- Drill fwd step holes using DT9616. Ensure proper positioning. All holes as per dwg D4168, detail A

6- Drill pilot holes as per Dwg D4168 sheet 4 (D4168-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.
SECOND SIDE

8- Drill most FWD wearplate hole using DT9678 locating off of 66.54" hole.

9-Open up holes of Detail A to 0.297" (total of 2 holes per side) and .201" (total of 1 hole per side) open holes of detail D section H-H to 0.500" as per dwg D4168

10-Weld D2744 Cap as per Dwg D4168 and QSI 004. Fill grooves in bend left from bending as per QSI 004

BB 11/04/25

BE 11/04/24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68738

Thursday, April 21, 2011 8:15:21 AM

Page 3

Item ID: D350-636-015

Accept

Setup Start

Revision ID:

Stop

Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
StampA/R Aluminum Rod batch: *M116577**BE 11/04/26*

11-Grind welds flush as per Dwg D4168

SAD 11-04-26

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

8/6/28

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

*8/6/28**(H)*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68738

Thursday, April 21, 2011 8:15:21 AM



Page 4

Item ID: D350-636-015

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

⇒ M-L 11/05/02

Hand Finishing

150

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 of 20 4/05/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68738

Thursday, April 21, 2011 8:15:21 AM

Page 5

Item ID: D350-636-015

Accept

Setup Start

Revision ID:

Stop

Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Open up holes of Detail C and ground handling section AL-AL to 0.625"
(total of 8 holes per side)
as per dwg D4168.

2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D4168.

3- Open float hole to 0.500" (4 per side) section AJ-AJ

Open wearplate holes to size as per dwg (4 holes per sides), section CG-CG

4-Chamfer holes of Detail B, C, ground handling section AL-AL and float holes
section AJ-AJ per dwg D4168 (welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R □□□ Sikaflex-291 batch: 116948 □□□
exp. date: 12/1/15

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D4168 and D4170-1
& QSI004

(welding instructions on sheet 8)

A/R□□□ Aluminum Rod batch: M116577

9- At section AJ-AJ drill out x-bolt spacer to 0.404"

11/05/05

11/05/05

BE 11/05/06
BE 11/05/06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Thursday, April 21, 2011 8:15:21 AM

Item ID: D350-636-015

Accept

Setup Start

Stop

Start Date: 4/20/2011 **Start Qty:** 1.00

Cust Item ID:

Required Date: 4/25/2011 **Req'd Qty:** 1.00

Customer:

Reference:

Run Start

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Operation Description

Set Up/ Run Hours

Tool ID**Tool #**

Plan Code	Description	Rate	Amount	Tax	Total
0000	PLAN CODE				
0001	PLAN CODE				
0002	PLAN CODE				
0003	PLAN CODE				
0004	PLAN CODE				
0005	PLAN CODE				
0006	PLAN CODE				
0007	PLAN CODE				
0008	PLAN CODE				
0009	PLAN CODE				
0010	PLAN CODE				
0011	PLAN CODE				
0012	PLAN CODE				
0013	PLAN CODE				
0014	PLAN CODE				
0015	PLAN CODE				
0016	PLAN CODE				
0017	PLAN CODE				
0018	PLAN CODE				
0019	PLAN CODE				
0020	PLAN CODE				
0021	PLAN CODE				
0022	PLAN CODE				
0023	PLAN CODE				
0024	PLAN CODE				
0025	PLAN CODE				
0026	PLAN CODE				
0027	PLAN CODE				
0028	PLAN CODE				
0029	PLAN CODE				
0030	PLAN CODE				
0031	PLAN CODE				
0032	PLAN CODE				
0033	PLAN CODE				
0034	PLAN CODE				
0035	PLAN CODE				
0036	PLAN CODE				
0037	PLAN CODE				
0038	PLAN CODE				
0039	PLAN CODE				
0040	PLAN CODE				
0041	PLAN CODE				
0042	PLAN CODE				
0043	PLAN CODE				
0044	PLAN CODE				
0045	PLAN CODE				
0046	PLAN CODE				
0047	PLAN CODE				
0048	PLAN CODE				
0049	PLAN CODE				
0050	PLAN CODE				
0051	PLAN CODE				
0052	PLAN CODE				
0053	PLAN CODE				
0054	PLAN CODE				
0055	PLAN CODE				
0056	PLAN CODE				
0057	PLAN CODE				
0058	PLAN CODE				
0059	PLAN CODE				
0060	PLAN CODE				
0061	PLAN CODE				
0062	PLAN CODE				
0063	PLAN CODE				
0064	PLAN CODE				
0065	PLAN CODE				
0066	PLAN CODE				
0067	PLAN CODE				
0068	PLAN CODE				
0069	PLAN CODE				
0070	PLAN CODE				
0071	PLAN CODE				
0072	PLAN CODE				
0073	PLAN CODE				
0074	PLAN CODE				
0075	PLAN CODE				
0076	PLAN CODE				
0077	PLAN CODE				
0078	PLAN CODE				
0079	PLAN CODE				
0080	PLAN CODE				
0081	PLAN CODE				
0082	PLAN CODE				
0083	PLAN CODE				
0084	PLAN CODE				
0085	PLAN CODE				
0086	PLAN CODE				
0087	PLAN CODE				
0088	PLAN CODE				

Accept
Qty

Reject
QtyReject
Number

**Insp.
Stamp**

10-Grind welds flush as per Dwg D4168

11-Spot face ground handling holes section (total of 4 places per side) as per dwg D4168, section AL-AL

12- C'bore section CG-CG

13- Deburr holes

170

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

180

QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68738

Thursday, April 21, 2011 8:15:21 AM



Page 7

Item ID: D350-636-015

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 BL 11-5-12

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

7:40
8:40
320 °F
8:20 8:10

1x Ø m/l 11/05/13

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

1 Ø H 11/05/19

M116964

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68738

Thursday, April 21, 2011 8:15:21 AM



Page 8

Item ID: D350-636-015

Accept



Setup Start



Revision ID:

Item Name: Skidtube STD w/ Training Wearplates, LH

Stop



Start Date: 4/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00



HandFinishing

0.00

HandFinish

Memo

Hand Finishing

1- Install inserts as per Dwg D4168

1 0 Id u106113

230

0.00



HandFinishing

0.00

HandFinish

Memo

Hand Finishing

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3" batch: N/A

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D4168

SIKA FLEX 241

BATCH: 11116945

EXP DATE: 12/08

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch: 11114139

5-Coat all exposed fasteners with "LPS Procyon" batch: 11114596

1 0 Id u106113

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68738

Thursday, April 21, 2011 8:15:21 AM

Page 9

Item ID: D350-636-015

Accept

Setup Start

Revision ID:

Stop

Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

11 06 13 (1)

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

If making a D350-636-215
pick kit will only requires:
1 X AN3C37A
1 X AN3C34A
1 X AN3C42A
2 X D3493-1

11/06/13

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

*****ensure antiseize is on AN8C21A bolts*****

(10)

8 ulocely

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 68738

Thursday, April 21, 2011 8:15:21 AM



Page 10

Item ID: D350-636-015

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 4/25/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270

0.00



Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD350-636-015

Location: _____

PPP rev: _____

PPM 68743

280

0.00



QC

QC21- Final Inspection - Work Order Release

Memo

0.00

Quality Control

11/6/15 C

11/6/15 J

MF
11-06-15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:27 AM

Page 1

Work Order ID: 68738

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011


Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC
11.04.14 ecn11-553 DD verf:EC


IPP Rev:B

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

AN3C34A  BOLT		Purchased	No			230	Each	13.0000	1	1			
---	--	-----------	----	--	--	-----	------	---------	---	---	--	--	--

Location Loc Qty Loc Code

ST353 13
116003 13

AN3C36A  BOLT		Purchased	No			230	Each	181.0000	4	4			
---	--	-----------	----	--	--	-----	------	----------	---	---	--	--	--

Location Loc Qty Loc Code

FG 14
101261 4
116590 10
FP-B 47
111925 47
ST303 20
116590 20
ST353 100
117125 100

1

4

x4

W/O: 1		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:27 AM

Work Order ID: 68738

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C37A Purchased No 230 Each 129.0000 1 1
BOLT

Location Loc Qty Loc Code

ST353 29
116874 11
117010 18
ST354 100
117343 100

AN3C42A Purchased No 230 Each 52.0000 1 1
BOLT

Location Loc Qty Loc Code

ST354 52
106176 52

D3492-1 Manufactured No 230 Each 0.0000 8 8
Plug

D3492-3 Manufactured No 230 Each 0.0000 8 8
Plug 03492-043 1

D3873-1 Manufactured No 230 Each 123.0000 7 7
Bushing

Location Loc Qty Loc Code

ST088 123
62197 12
63314 2
64567 9
64760 100

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:28 AM

Page 3

Work Order ID: 68738

Parent Item: D350-636-015





Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00



Required Qty: 1.00

D4154-041	Manufactured	No	230	Each	0.0000	1	1
							B68361 (x1) JL 1106113
Wearplate Assembly							
D4170-1	Manufactured	No	230	Each	50.0000	4	4
							BBH/03/06
Bushing							

Location Loc Qty Loc Code

LG 46
61581 5
68225 41
LG002 4
65912 4



4

D4171-1	Manufactured	No	230	Each	8.0000	1	1
							JL 1106113
Bushing							

Location Loc Qty Loc Code

ST135 8
65646 8

X1
74
JL 1106113

MS21043-3	Purchased	No	230	Each	930.0000	5	5
							JL 1106113
Nut							

Location Loc Qty Loc Code

FG 80
103691 80
FP-B -5
112314 -5
ST301 855
112314 855

X4

Thursday, April 21, 2011 8:15:28 AM

Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:28 AM

Work Order ID: 68738



Parent Item: D350-636-015



Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0363R

Purchased

No

230

Each

4,735.000

9



Washer



97

HL

u106113

Location

Loc Qty

Loc Code

ST297

4735

113889

81

114742

4654

x7

NAS1515H3L

Purchased

No

230

Each

285.0000

4



WASHER



4

HL

u106113

Location

Loc Qty

Loc Code

FG

40

102472

40

ST277

245

113362

245

x4

NAS1611-010

Purchased

No

230

Each

266.0000

8



O-RING



8

HL

u106113

Location

Loc Qty

Loc Code

FP

80

117460

80

FP-A

186

110915

139

115589

47

x8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:28 AM

Work Order ID: 68738

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

NAS1611-013

Purchased No

230 Each

176.0000

8

8



O-RING



md uloc 13

Location

Loc Qty

Loc Code

FP

171

117291

131

117460

40

FP-A

5

116582

5

x8

AN960JD816

Purchased No

250 Each

45.0000

2

2



1/2" washer, Alum



md uloc 13

Location

Loc Qty

Loc Code

FP-A

45

106043

45

x2

D2744

Manufactured No

110 Each

37.0000

1

1



Cap



BE 11/04/20

Location

Loc Qty

Loc Code

LG002

37

62715

8

65086

29

1

D2600-3-BENT

Manufactured No

110 Each

29.0000

1

1



Extrusion Bent



Location

Loc Qty

Loc Code

LG

29

66874

1

66875

8

68137

10

68138

10

1

BB 4/09/20

Thursday, April 21, 2011 8:15:29 AM

Shop Packet Print

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:29 AM

Page 6

Work Order ID: 68738



Parent Item: D350-636-015



Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D2743 Manufactured No

160 Each

123.0000 8 8



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG001

123

67766

123

D2739 Manufactured No

160 Each

14.0000 1 1



350 I Beam

Location

Loc Qty

Loc Code

LG

14

67785

2

68285

6

68286

6

D3490-3 Manufactured No

160 Each

66.0000 4 4



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

26

68106

26

LG001

40

67774

40

D3490-1 Manufactured No

160 Each

93.0000 4 4



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

91

67773

31

68105

60

LG001

2

62450

2

Thursday, April 21, 2011 8:15:29 AM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:29 AM

Page 7

Work Order ID: 68738

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No

230

Each

1,113.000

4

4



Insert



1106113

Location

Loc Qty

Loc Code

FP-B

40

110768

40

ST282

1073

110768

1073

x4

AN8C35A

Purchased

No

230

Each

30.0000

1

1



BOLT



1106113

Location

Loc Qty

Loc Code

FP-A

30

115960

7

116874

23

x1

D3488-041

Manufactured

No

230

Each

4.0000

1

1



Blade Fitting Assembly, LH



1106113

Location

Loc Qty

Loc Code

FP007

1

61689

1

FP008

3

62002

3

1368108

x1

Thursday, April 21, 2011 8:15:29 AM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:29 AM

Page 8

Work Order ID: 68738



Parent Item: D350-636-015



Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

AN6C44A	Purchased	No	230	Each	86.0000	4	4
							<u>44</u> 1106113
BOLT							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FG	2	
103964	2	
ST344	84	
116874	4	
<u>117407</u>	80	<u>44</u>

MS21083C8	Purchased	No	230	Each	91.0000	1	1
							<u>44</u> 1106113
NUT							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP-B	1	
115884	1	
ST303	90	
115884	0	
<u>117291</u>	40	<u>44</u>
117423	50	

D3631-1	Manufactured	No	230	Each	500.0000	8	8
							<u>44</u> 1106113
Washer							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST072	500	
<u>68062</u>	500	<u>44</u>

AN960C10L	NAS1149C0332 R	Purchased	No	230	Each	0.0000	4	4
							<u>44</u> 1106113	
washer								

Thursday, April 21, 2011 8:15:30 AM

Shop Packet Print

Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:30 AM

Work Order ID: 68738



Parent Item: D350-636-015



Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D2745

Manufactured No

230

Each

13.0000

8

8



Bushing



1106113

Location

Loc Qty

Loc Code

FP-A

13

1368248

x 8

67764

13

AN960C816L

Purchased No

230

Each

0.0000

1

1



NAS1149C0832R (M114915



(x1) 1106113

WASHER

AN3C6A

Purchased No

230

Each

224.0000

4

4



1106113

BOLT

Location

Loc Qty

Loc Code

FP-A

1

1117517

x 4

111982

1

ST351

223

111982

2

116419

71

116549

50

116704

100

MS21043-6

Purchased No

230

Each

527.0000

4

4



1106113

NUT

Location

Loc Qty

Loc Code

FG

20

103693

20

FP-A

44

112314

44

x 4

ST301

463

112314

463

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Thursday, April 21, 2011 8:15:30 AM

Page 10

Work Order ID: 68738

Parent Item: D350-636-015

Parent Item Name: Skidtube STD w/ Training Wearplates, LH

Start Date: 4/20/2011

Required Date: 4/25/2011

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250

Each

33.0000

2



Washer



SP 11/6/13

Location

Loc Qty

Loc Code

ST062

33

66973

33

2

MS21083C8

Purchased No

250

Each

91.0000

2



NUT



2
11/6/13

Location

Loc Qty

Loc Code

FP-B

1

115884

1

ST303

90

115884

0

117291

40

117423

50

X2

AN8C21A

Purchased No

250

Each

28.0000

2



BOLT



2
11/6/13

Location

Loc Qty

Loc Code

ST345

28

116381

28

X2

D2741

Manufactured No

250

Each

50.0000

1



Blade, 350 Skidtube



1

Location

Loc Qty

Loc Code

ST466

50

61341

12

63589

38

1 11/05/12

Thursday, April 21, 2011 8:15:30 AM

Shop Packet Print

Page 10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

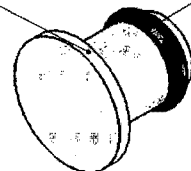
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

D3492-XX PLUG
(SEE TABLE)

NAS1611 PLUG
(SEE TABLE)



D3492-XXX PLUG PARTS LIST

QTY -041	QTY -043	QTY -045	QTY -047	QTY -049	QTY -051	QTY -053	PART NUMBER	DESCRIPTION
X							D3492-041	PLUG ASSEMBLY
	X						D3492-043	PLUG ASSEMBLY
		X					D3492-045	PLUG ASSEMBLY
			X				D3492-047	PLUG ASSEMBLY
				X			D3492-049	PLUG ASSEMBLY
					X		D3492-051	PLUG ASSEMBLY
						X	D3492-053	PLUG ASSEMBLY
1							D3492-1	PLUG
	1						D3492-3	PLUG
		1					D3492-5	PLUG
			1				D3492-7	PLUG
				1			D3492-9	PLUG
					1		D3492-11	PLUG
						1	D3492-13	PLUG
		1					NAS1611-005	O-RING
			1				NAS1611-007	O-RING
1							NAS1611-010	O-RING
						1	NAS1611-012	O-RING
	1						NAS1611-013	O-RING
					1		NAS1611-015	O-RING
				1			NAS1611-016	O-RING

△ C △ C △ C

NOTES:

1) O-RING: POSSIBLE SUPPLIER P/N: NAS1611-XXX OR PARKER 2-XXX

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 4873F

D/11-04-21

~~UNDER REVIEW~~

OK ASS 08.11.12

DEO ATTACHED

RELEASED

C	ADD -049/-051/-053, CHANGE DRAWING FORMAT	PH	07.10.05
B	ADD -047, UPDATE DIM A FOR -045	PH	06.05.11
A	NEW ISSUE	PH	06.01.04
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	07.10.05		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D3492	REV. C SHEET 1 OF 2
TITLE PLUG	SCALE 2:1

COPYRIGHT © 2007 BY DART AEROSPACE LTD.
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

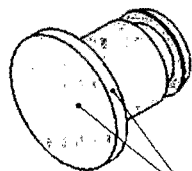
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

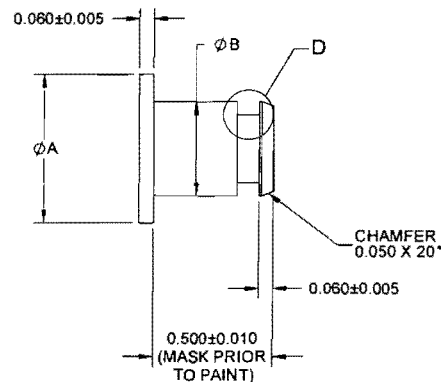
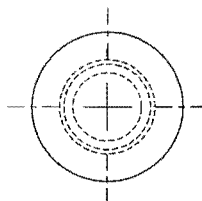
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

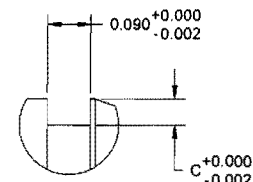
NOTE: Date & initial all entries



POWDER COAT THESE
FACES ONLY PER NOTE 2



D3492-XX PLUG



DETAIL D

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC
D3492-1	0.625	0.394	0.055	M6061T6R0.625
D3492-3	0.750	0.582	0.045	M6061T6R0.750
D3492-5	0.375	0.188	0.045	M6061T6R0.375
D3492-7	0.500	0.270	0.045	M6061T6R0.500
D3492-9	0.938	0.750	0.045	M6061T6R1.000
D3492-11	0.850	0.664	0.045	M6061T6R0.875
D3492-13	0.750	0.520	0.045	M6061T6R0.750

NOTES:

- 1) MATERIAL: ALUMINUM 5052-H32 OR 6061-T6 OR 1100-0 PER QQ-A-225/7 (5052) OR QQ-A-225/8 (6061) OR QQ-A-200/8 (6061) OR QQ-A-225/1 (1100) (REF. DART MATERIAL SPEC M6061T6R0.000)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE GLOSS (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A

DEO ATTACHED

RELEASED

DESIGN		DART AEROSPACE LTD
DRAWN		HAWKESBURY, ONTARIO, CANADA
CHECKED		DRAWING NO. D3492 REV. C
MFG. APPR.		SHEET 2 OF 2
APPROVED		TITLE PLUG SCALE 4:1
DE APPR.		
DATE	07.10.05	

COPYRIGHT © 2007 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD

w/068738

UNDER REVIEW
01.01.11
OK
15508.11.12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D3492	TITLE PLUG	REV. C	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D3492-C-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN AJS	CHECKED	MFG. APPR.	APPROVED	DE APPR.			
DATE 08.11.05	DATE 08.11.05	DATE 08.11.05	DATE 08/11/05	DATE 08/11/05			

SHEET 2 MODIFY -13 PLUG AS SHOWN:

IS:

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC
D3492-13	0.750	0.510	0.045	M6061T6R0.750

w/o 68738

WAS:

D3492-XX PLUG MACHINING DETAILS

P/N	A	B	C	MATERIAL SPEC
D3492-13	0.750	0.520	0.045	M6061T6R0.750

RELEASED
08/11/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3873-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
1				D4168-1	SKIDTUBE WELDMENT, LH
	1			D4168-2	SKIDTUBE WELDMENT, RH
		1		D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149CO363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149CO332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149CO832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083CB	NUT
4	4	4	4	NAS1515H3L	WASHER

a/068738

GENERAL NOTES:

- MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- WELD PER DART QSI 004
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

RELEASED
2010-09-15

A NEW ISSUE		SC	10.08.09
REV.	DESCRIPTION	BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 1 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS UNCLASSIFIED AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

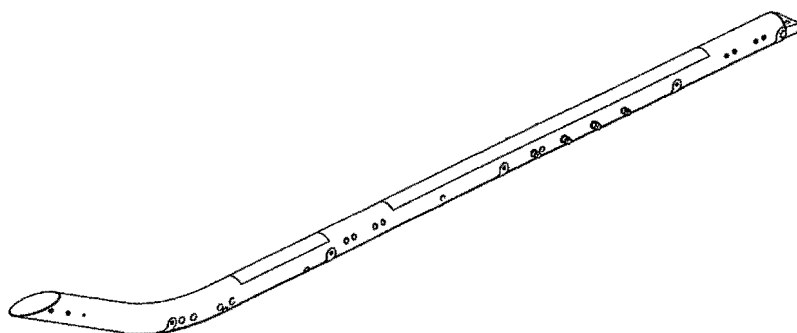
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

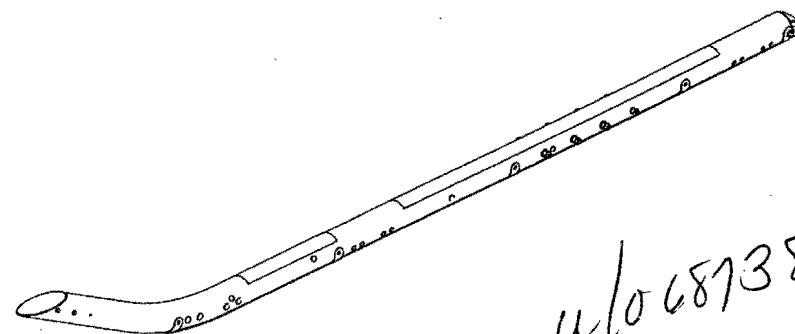
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15
JW

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 2 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESSED UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

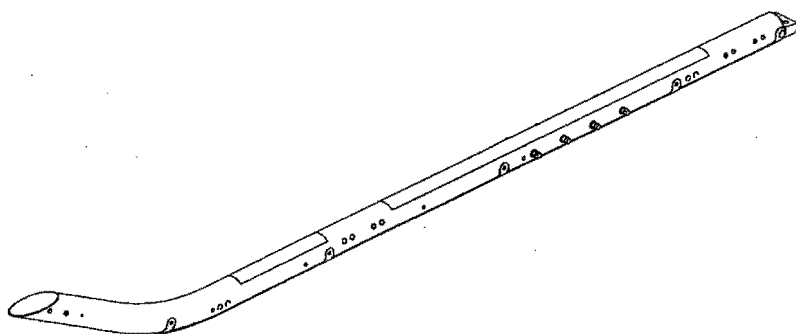
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

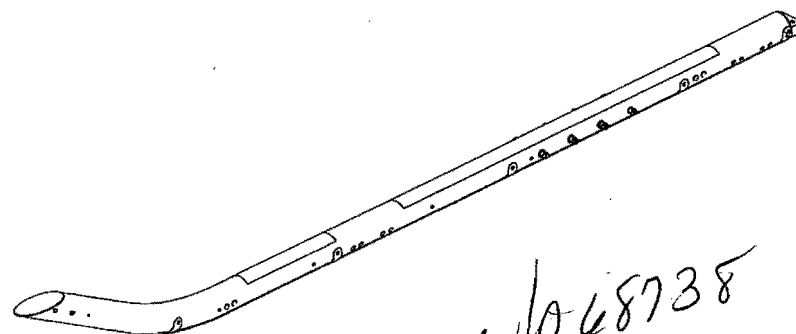
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4168	SHEET 3 OF 11
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

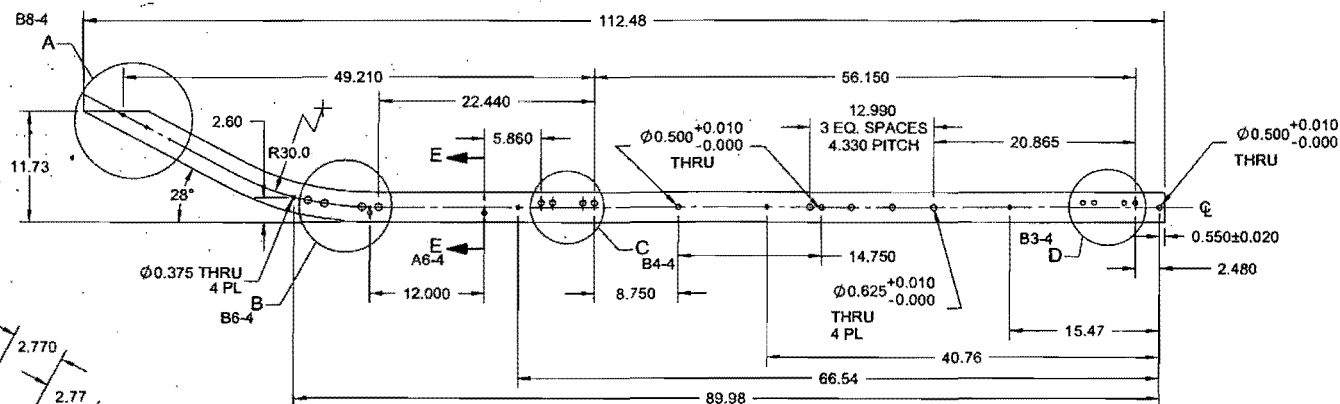
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

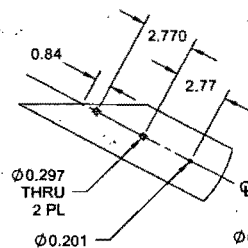
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

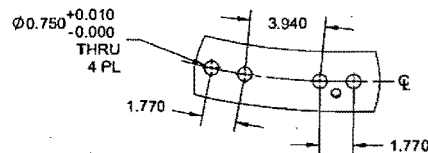
8 7 6 5 4 3 2 1



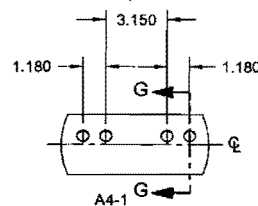
D4168-1 LH SKIDTUBE



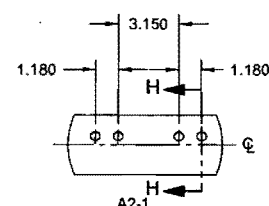
DETAIL A
SCALE 2X



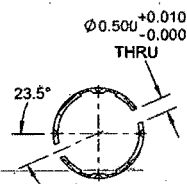
DETAIL B
SCALE 2X



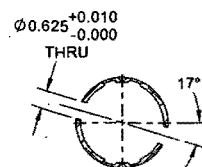
DETAIL C
SCALE 2X



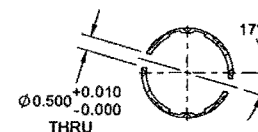
DETAIL D
SCALE 2X



SECTION E-E
SCALE 3X, 2 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

DESIGN	SC
DRAWN	SC
CHECKED	SC
MFG. APPR.	SC
APPROVED	SC
DE APPR.	SC
DATE	10.08.09

DART AEROSPACE USA, INC.
PORT HADLOCK, WA

DRAWING NO. **D4168** REV. A
SHEET 4 OF 11

TITLE **350 SKIDTUBE ASSEMBLY** SCALE NTS

COPYRIGHT © 2010 BY DART AEROSPACE USA, INC.
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

u1068238

RELEASED
R 2010-09-15

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

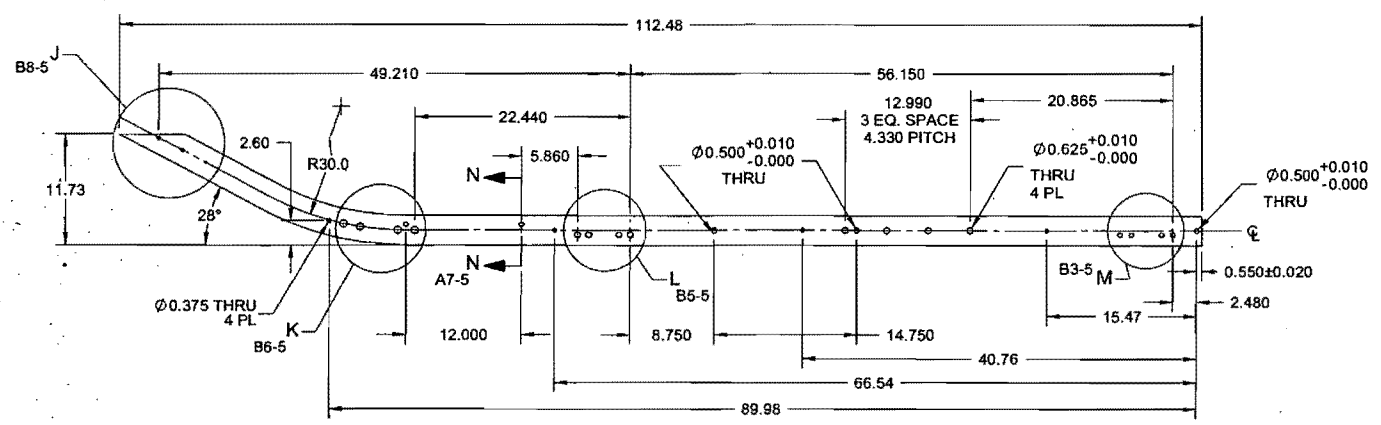
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

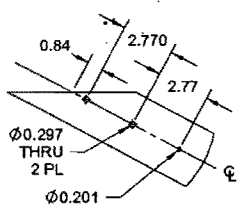
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

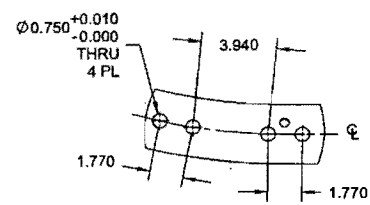
8 7 6 5 4 3 2 1



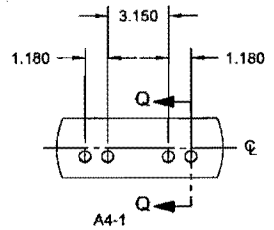
D4168-2 RH SKIDTUBE



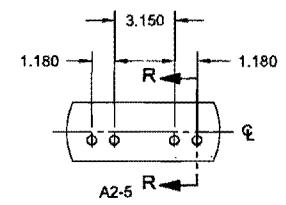
DETAIL J
SCALE 2X



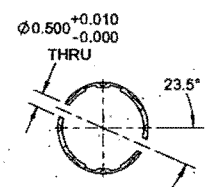
DETAIL K
SCALE 2X



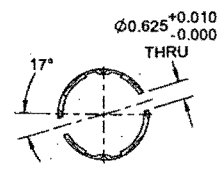
DETAIL L
SCALE 2X



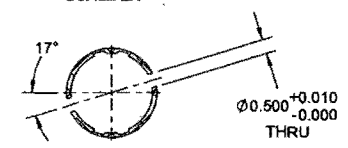
DETAIL M
SCALE 2X



SECTION N-N
SCALE 3X, 2 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

u1068735

RELEASED
2010-09-15
MD

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 5 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PREPARED AND SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

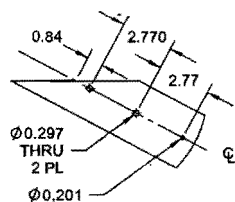
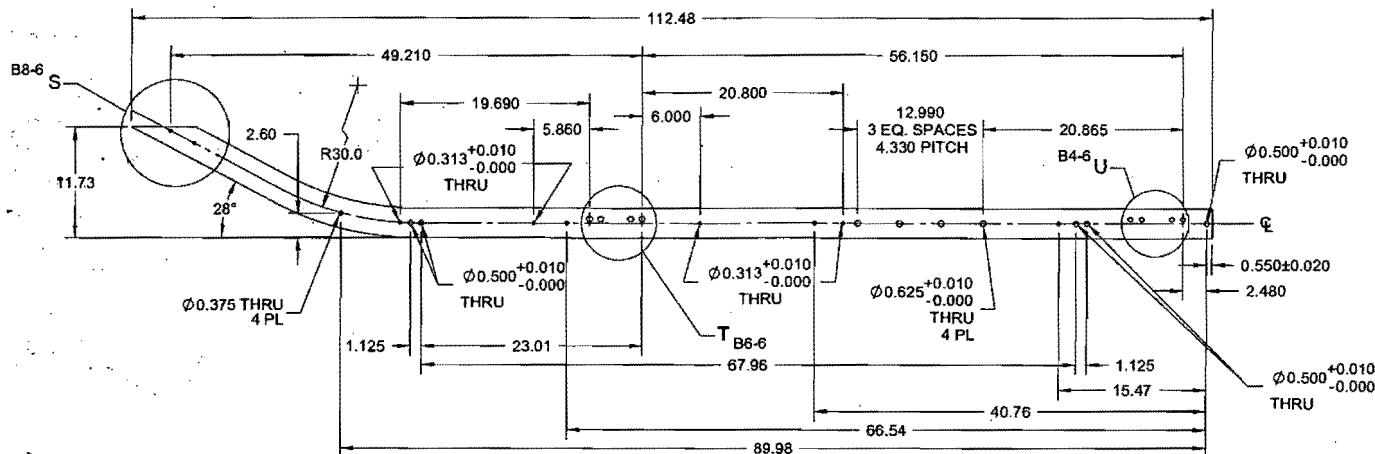
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

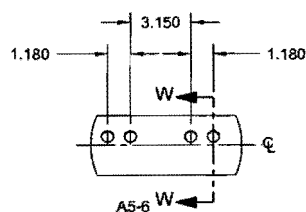
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

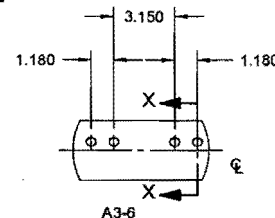
8 7 6 5 4 3 2 1



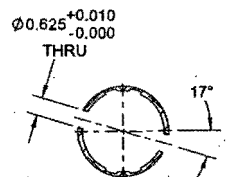
DETAIL S
SCALE 2X



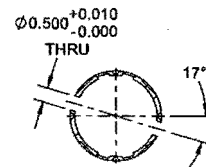
DETAIL T
SCALE 2X



DETAIL U
SCALE 2X



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

wlo 68238

RELEASED
2010-09-15

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 6 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS UNCLASSIFIED AND IS RELEASED ON THE CORRECTED COPY THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR DISCLOSED OR TRANSMITTED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

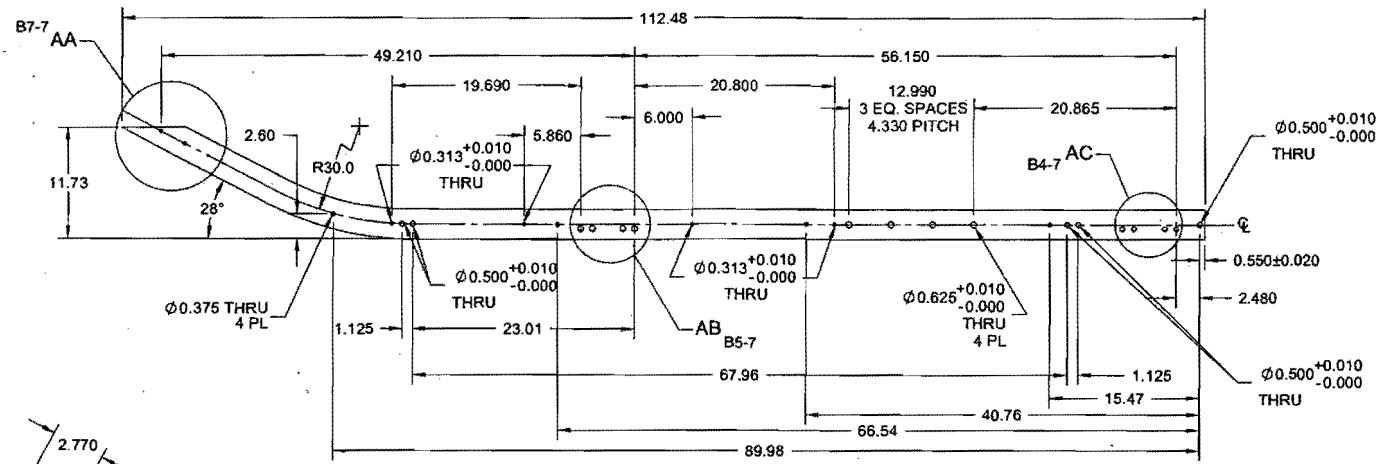
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

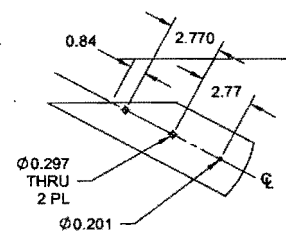
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

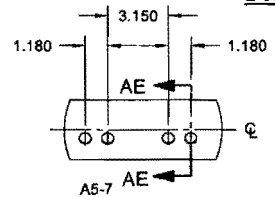
8 7 6 5 4 3 2 1



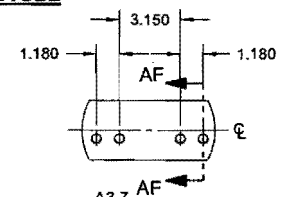
D4168-4 RH SKIDTUBE



DETAIL AA
SCALE 2X

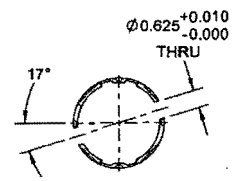


DETAIL AB
SCALE 2X

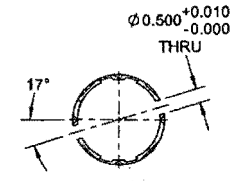


DETAIL AC
SCALE 2X

w/o 68738



SECTION AE-AE
SCALE 3X, 4 PL



SECTION AF-AF
SCALE 3X, 4 PL

RELEASED
2010-09-15

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 7 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCIAL OR INDUSTRIAL PURPOSE WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

8 7 6 5 4 3 2 1

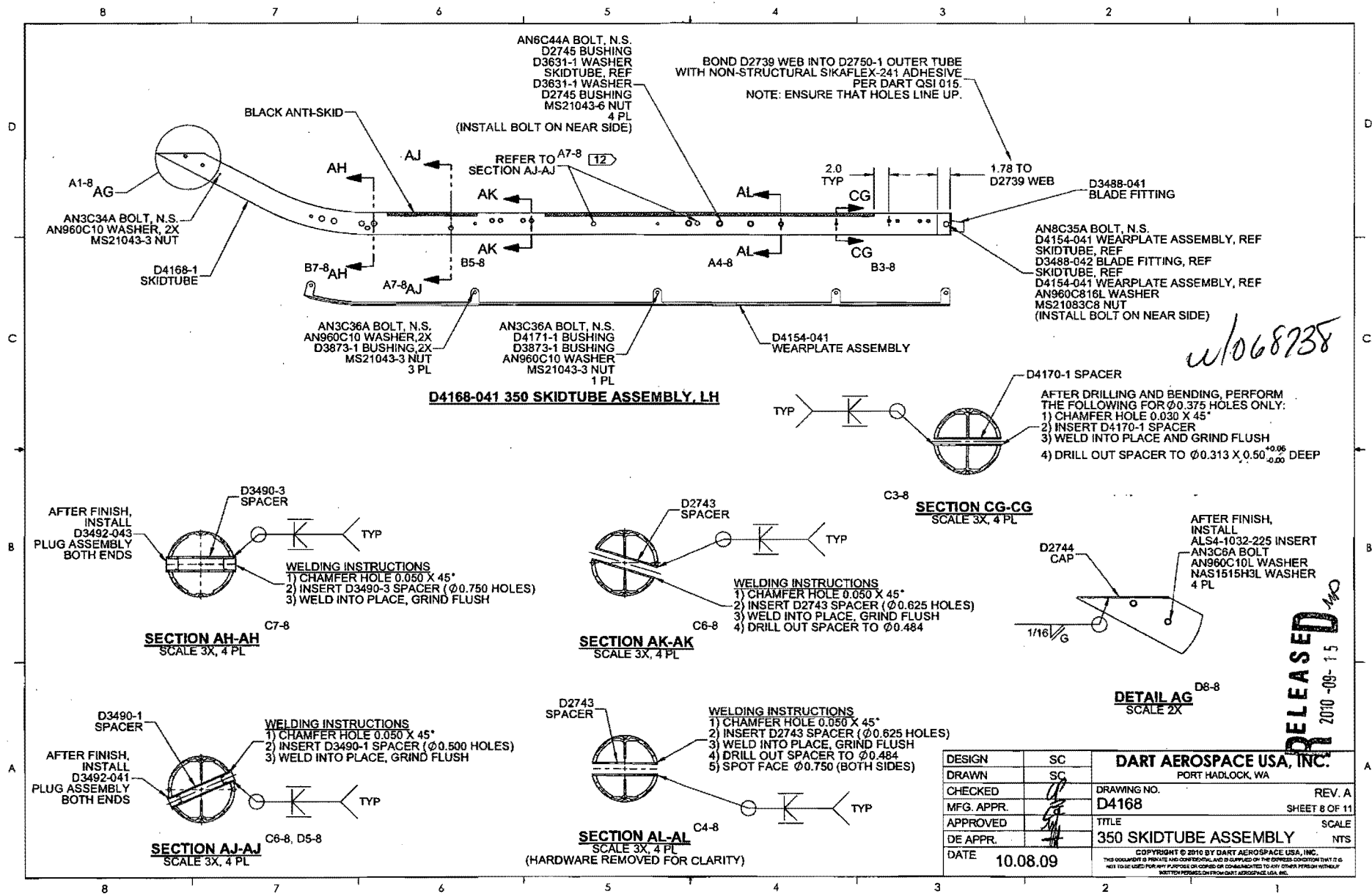
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

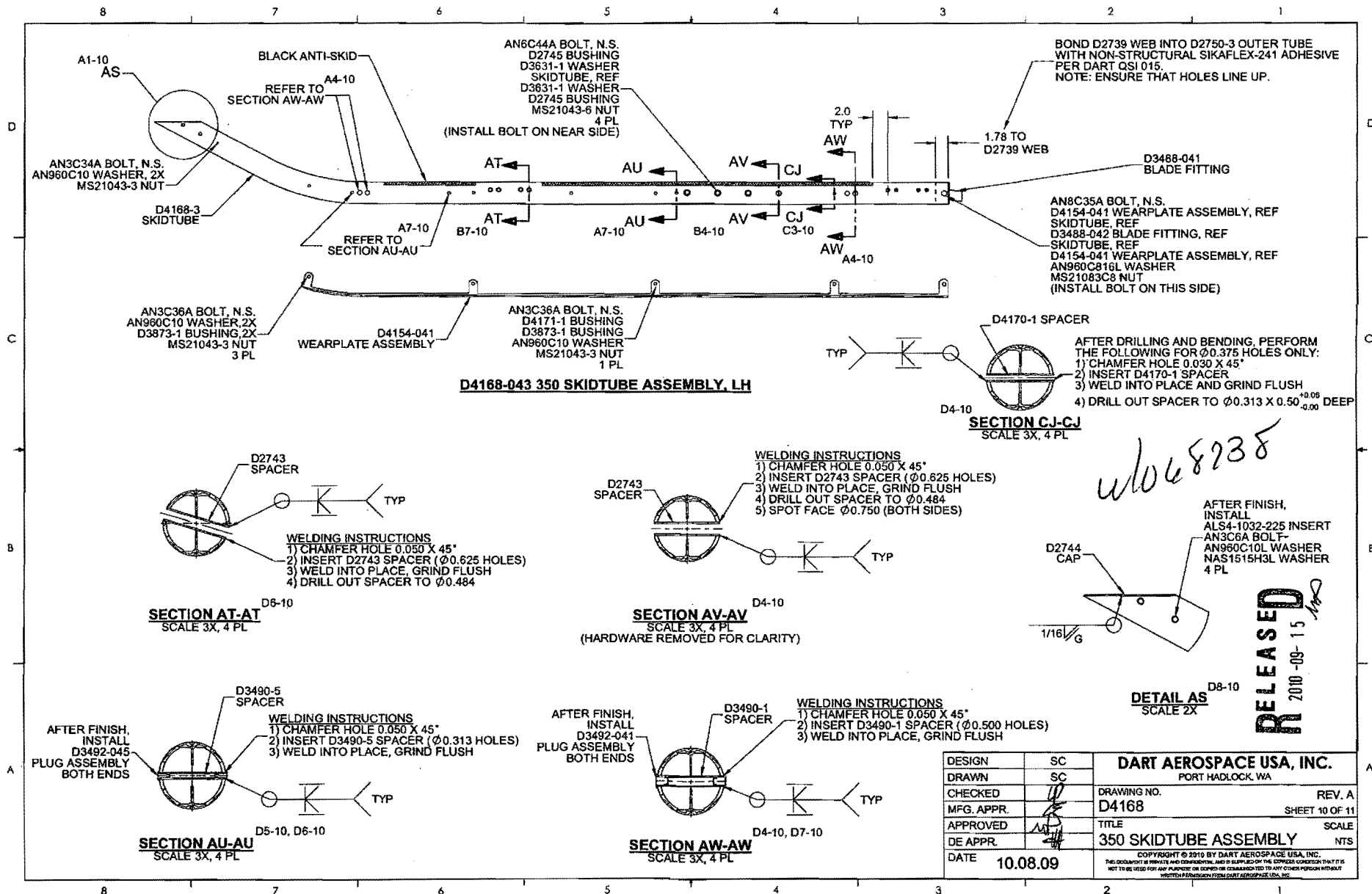
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 248

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 67178
Part number: D350 636 015
Description: 350
Welding Process: Tig ☒ Mig ☐
Base material: Aluminum
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier Pat. Lipp Date of Test Coupon 11.04.05
Welder Barclay Elliott Date of Test Coupon 11.04.05

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

